In the Claims

32. (Previously Presented) A method of automatically selecting MR data for image reconstruction comprising the steps of:

acquiring MR data from each of a plurality of receiver coils;

reconstructing a plurality of images from the MR data, each image having a measurable sensitivity to a desired FOV;

comparing the sensitivities of the plurality of images; and

combining those of the plurality of images having a sensitivity to the desired FOV that exceeds a threshold to form a composite image.

33. (Previously Presented) The method of claim 32 wherein the plurality of receiver coils include a phased array coil assembly of a medical imaging scanner and further comprising the steps of:

projecting a measured sensitivity value for each of the plurality of images onto an axis of the MR coils and conducting a profile fit to determine coil sensitivity to the desired FOV;

determining a peak location of the profile along the axis of the receiving coils; and

using those images within a pre-set standard deviation of the peak for combining into the composite image.

34. (Previously Presented) The method of claim 32 further comprising the step of determining an integration of a coil sensitivity profile weighted by a spin density of a scanning subject over the desired FOV for each receiver coil.

35. (Previously Presented) The method of claim 32 wherein the sensitivity of each image is determined by approximating a constant spin density according to:

$$G_i = \sum_{(x,y)} \left| S_i(x,y) M(x,y) \right| \approx M_0 \sum_{(x,y)} \left| S_i(x,y) \right|$$

where $S_i(x,y)$ is a spatial sensitivity of an i-th MR coil of an N-coil phased coil array, and M(x,y) is a spin magnetization density weighted by an imaging sequence, M_o is the approximated constant spin density, and where the summation is over all spatial pixels in a desired FOV.

36. (Previously Presented) The method of claim 32 wherein the sensitivity of each image is determined without assuming a constant spin density according to:

$$C_i = \sum_{(x,y)} \left(|I_i(x,y)| / \sum_i |I_i(x,y)| \right) = \sum_{(x,y)} \left(|S_i(x,y)| / \sum_i |S_i(x,y)| \right)$$

where $S_i(x,y)$ is a spatial sensitivity of an i-th MR coil of an N-coil phased coil array, $I_i(x,y)$ is a total intensity obtained from central k-space data for each MR coil, and wherein the summation is over all spatial pixels in a desired FOV.

37. (Previously Presented) The method of claim 32 wherein each step is performed automatically by a computer system, without a hardware landmark, and without user input.

38. (Previously Presented) The method of claim 32 wherein the desired FOV spans a region-of-interest less than a maximum coverage of the plurality of receiver coils.

39. (Previously Presented) An MRI apparatus to reduce artifacts in reconstructed images comprising:

a magnetic resonance imaging (MRI) system having a plurality of coils positioned about a bore of a magnet to impress a polarizing magnetic field and an RF transceiver system and an RF switch controlled by a pulse module to transmit and receive RF signals to and from a multi-coil RF coil assembly to acquire MR images; and

a computer programmed to:

acquire MR images from each coil of the multi-coil RF coil assembly from across an image FOV;

determine an intensity value for each MR image;

display an intensity map of the intensity values of the MR images; and

allow an operator to select images from the map for inclusion into a composite image of the image FOV.

40. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to reconstruct a final image by combining the images selected by the operator.

41. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to determine a coil position relative to the image FOV for each of the coils from the intensity values of the MR image.

42. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to determine at least one of a peak intensity location of the intensity map, a center of mass of the intensity map, and superimpose the intensity map onto a coil map of the multi-coil RF coil assembly.

43. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to differentiate the MR images dynamically and without a hardware landmark, and without a lookup table, and without user input parameters relating to differentiation.

44. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to isolate at least one MR image having an intensity value less than an intensity threshold that is determined based on the determined intensity values.

45. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to calculate an index gauge as the intensity value by approximating a constant spin density according to:

$$G_i = \sum_{(x,y)} \left| S_i(x,y) M(x,y) \right| \sim M_0 \sum_{(x,y)} \left| S_i(x,y) \right|$$

where $S_i(x,y)$ is a spatial sensitivity of an i-th MR coil of an N-coil phased coil array, and M(x,y) is a spin magnetization density weighted by an imaging sequence, M_o is the approximated constant spin density, and where the summation is over all spatial pixels in a desired FOV.

46. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to calculate an index gauge as the intensity value without assuming a constant spin density according to:

$$G_i = \sum_{(x,y)} \left(|I_i(x,y)| / \sum_i |I_i(x,y)| \right) * \sum_{(x,y)} \left(|S_i(x,y)| / \sum_i |S_i(x,y)| \right)$$

where $S_i(x,y)$ is a spatial sensitivity of an i-th MR coil of an N-coil phased coil array, $I_i(x,y)$ is a total intensity obtained from central k-space data for each MR coil, and wherein the summation is over all spatial pixels in a desired FOV.

47. (Previously Presented) The MRI apparatus of claim 39 wherein the computer is further programmed to exclude an MR image acquired from a coil that is at least partially outside the image FOV.

48. (Previously Presented) A computer program having a set of instructions that when executed by a computer causes the computer to:

generate a plurality of images from data acquired from a plurality of data channels of a phased array coil assembly in a medical imaging scanner;

determine an intensity value for each image;

automatically select images for inclusion in a composite image;

map the intensity values and visually display the map to an operator; and

prompt the operator to confirm, for inclusion in the composite image, the automatically selected images.

49. (Previously Presented) The computer program of claim 48 wherein the set of instructions further causes the computer to automatically select the images for inclusion based on a relative intensity of each image to an FOV.

50. (Previously Presented) The computer program of claim 49 wherein the FOV is less than a maximum achievable FOV of the phased array coil assembly.

51. (Previously Presented) The computer program of claim 48 wherein the set of instructions further causes the computer to:

determine a plurality of mean values for the plurality of images;

determine a total mean value from the plurality of images; and

select images from the plurality of images having a mean value greater than a percentage of the total mean value.